# Integral University, Lucknow
## Department of Computer Application
### STUDY & EVALUATION SCHEME
### Choice Based Credit System

## Bachelor of Computer Application (BCA)
## w.e.f. Session 2017-18

**Year III<sup>rd</sup>, Semester VI<sup>th</sup>**

| S. No. | Course Category | Subject Code | Name of the Subject | Periods | | | | Evaluation Scheme | | | | Subject Total |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | Sessional (CA) | | | End Sem. Exam | |
| | | | | L | T | P | C | CT | TA | Total | ESE | |
| 1. | Core | CA313 | .NET Framework with VB. NET | 3 | 1 | 0 | 4 | 25 | 15 | 40 | 60 | 100 |
| 2. | Core | CA314 | Introduction to Open Source Environment | 3 | 1 | 0 | 4 | 25 | 15 | 40 | 60 | 100 |
| 3. | Core | CA315 | Cyber Law and Internet Security | 3 | 1 | 0 | 4 | 25 | 15 | 40 | 60 | 100 |
| 4. | Elective – V | | | 3 | 1 | 0 | 4 | 25 | 15 | 40 | 60 | 100 |
| 5. | Core | CA321 | Project Lab | 0 | 0 | 6 | 3 | 30 | 30 | 60 | 40 | 100 |
| 6. | Core | CA322 | Advanced Technology Lab | 0 | 0 | 2 | 1 | 30 | 30 | 60 | 40 | 100 |
| 7. | Core | CA323 | Open Source Lab | 0 | 0 | 2 | 1 | 30 | 30 | 60 | 40 | 100 |
| **Total** | | | | **12** | **4** | **10** | **21** | | | | | **700** |

**L** - Lecture   **T** – Tutorial   **P** – Practical   **C** – Credit   **CT** – Class Test   **TA** – Teacher Assessment
**Sessional Total (CA)** = Class Test + Teacher Assessment

**Subject Total** = Sessional Total (CA) + End Semester Examination (ESE)

**Elective - V**
CA316   Management Information System
CA317   E-Governance
CA318   Fundamentals of E-Commerce
CA319   ERP Systems
CA320   AI and Expert Systems

# CA313 .NET FRAMEWORK WITH VB .NET

## w.e.f. Session 2017-2018

**PREREQUISITE: NONE**          **COREQUISITE: CA322**          **L T P**

**3 1 0**

**UNIT-I**
**Introduction to Microsoft .NET Framework and VB.NET:** Overview of Microsoft .NET Framework, The .NET Framework Components, The Common Language Runtime (CLR) Environment, The .NET Framework Class Library. Getting Started with Visual Basic .NET IDE: Toolbars, New Project Dialog Box, Graphical Designers, Code Designers, Intellisense, Object Explorer, Toolbox, The Solution Explorer, The Class View Window, Properties Window, Dynamic Help Window, Server Explorer, Output Window, Command Window. Visual Basic Language Concept: Variables, Constants, Data Types, Operators, Control Structures and Loops. Arrays: Single and Multidimensional Array, Declaring, Dynamic Array. [7]

**UNIT-II**
**Introduction to Windows Common Controls:** Working with Form: Properties, Appearance, Behavior, Layout, Windows Style, Methods and Events, Differentiate Procedure Oriented, Object Oriented and Event Driven Programming, InputBox, MessageBox, Working with Common Tool Box Controls: Label and Button, TextBox, NumericUpDown, Check Box, Radio Button, Group Box Control and all important Methods and Events. [9]

**UNIT-III**
**Additional Controls and Menus of Windows:** Working with other Controls of Toolbox: Date Time Picker, List Box, Combo Box, Picture Box, Rich Text Box, Progress Bar, Masked Text Box, Link Label, Checked List Box, Scroll Bars, Timer. Working with Menus: Creating Menu, Inserting, Deleting, Assigning Short Cut Keys, Popup Menu. [8]

**UNIT-IV**
**Advanced Features of VB.NET:** Dialog Boxes, Open File Dialog, Save File Dialog, Font Dialog, Color Dialog, Print Dialog. **Sub Procedures and Functions:** Declaring, Passing and Returning Arguments, Exiting from it, Pass by Value and Pass by Ref.
**Exception Handling:** Structured Error Handling (Try, Catch, Finally), Unstructured Error Handling. **Multiple Documents Interface (MDI):** MDI Parent Form and Child Form. [8]

**UNIT-V**
**Inbuilt Functions and Database Access using ADO.NET:** Inbuilt Functions, Mathematical Functions, The abs Function, The exp Function, The fix Function, The int Function, The log Function, The rnd Function, String Manipulation, Format Functions.
**ADO.NET Object Model:** ADO.NET, Data Provider, Dataset, ADO.NET Programming**:** Creating a Database Application, Connection to Database with Server Explorer, Data Binding, DataGridView, Data Form Wizard, Data Validation, Populating Data in ADO.NET, Browsing Records, Editing, Saving, Adding and Deleting Records using Bounded and Unbounded Controls, Generic Reports using Crystal Report Viewer. [8]

**REFERENCES:**
1. Deitel and Deitel, "Visual Basic.NET How to Program", Pearson Education.
2. Richard Blair, Mathew Renolds, "Beginning VB.NET 2003", Wrox Publication.
3. Bill Evjen, Billy, Hollis, "Professional VB.NET 2003", 3rd edition, Wrox Publication.
4. Michael Halvorson, "VB.Net", PHI.
5. Daniel Cazzulino, "Beginning Web Programming using VB.NET and Visual Studio .NET", Wrox Press.
6. David Vitter, "Designing VB.NET Application - A Developer's Indispensable Guide to VB.NET", Dreamtech Press.
7. Evangelos Petroutsos, "Mastering VB.NET", BPB Publications.
8. Steven Holzner, "VB.NET Programming Black Book", Dreamtech Publications.

# CA314 INTRODUCTION TO OPEN SOURCE ENVIRONMENT

## w.e.f. Session 2017-2018

**PREREQUISITE: NONE**    **COREQUISITE: CA323**    **L  T  P**

**3  1  0**

**UNIT-I**
**Introduction to PHP:** Introduction, Uses of PHP, Using PHP in Web Application, Using PHP for Database Applications, Using PHP with your File System, Using PHP for System Commands, Understanding the working of PHP, PHP as a General Purpose Language, PHP for the Web, Keeping up with Changes in PHP, PHP 5, Writing PHP Statements, Adding PHP Sections to HTML File, PHP Output Statement, Documenting your Scripts.          [8]

**UNIT-II**
**Basics of PHP Script & Working with Data:** Understanding Data Types, Performing Arithmetic, Manipulating Characters String, Using Date and Time, Naming Variables, Assigning values to Variable, Removing Variables, Using Constants, Handling Errors.
**Storing Data in Group by using Arrays:** Introduction, Building Arrays, Assigning values to Arrays, Sorting Arrays, Using value in Arrays, Building Multidimensional Arrays.          [8]

**UNIT-III**
**Controlling the Flow Script & Reusing PHP Code :**Introduction, Changing the order  of Statements Executed, Setting up Condition, Joining Simple Conditions to make Complex Conditions, Using Conditions in Conditional Statements and Loops, Writing if Statements, Building and using Loops, Breaking Loop, Including Files in Scripts, Understanding Store for included Files, Writing Functions, Using Functions in PHP.
**Object Oriented Concepts in PHP:** Introduction, Understanding Object Oriented Programming, Identifying Objects, Writing Classes, Object Oriented Concepts.          [8]

**UNIT-IV**
**Web Application and PHP :** Introduction, Understanding Web Security, Displaying Static Pages, Collecting Information from User with HTML Forms, Processing Information received from Users, Passing Information from Page to Page, Using Cookies, Using Hidden Fields in HTML Forms, Using HTTP Session Functions, Adding JavaScript to PHP Scripts, Writing and Reading Flat Files in PHP.
Introduction to CMS (Drupal, Joomla) and PHP Framework (Cake PHP).          [8]

**UNIT-V**
**PHP and MySQL:** Introduction to MySQL, Effectiveness of MySQL, MySQL Tools, Prerequisites for MySQL Connection, Displaying Queries in Tables, Database Tables, Database Manipulation in MySQL (CREATE, INSERT, UPDATE, DELETE) Operation, SQL Functions. Exchanging Data between PHP and other Programs, Understanding Database supports in PHP, Using PHP to Interact with a Database, PHP/MYSQL Connection, Handling Database-Connection Errors, Validating User Input using JavaScript.          [8]

**REFERENCES:**
1.  Vikram Vaswani, "PHP and MySQL", Tata McGraw-Hill, 2005.

2. Ben Forta, "MySQL Crash Course", SAMS, 2006.
3. Tim Converse, Joyce Park and Clark Morgan, "PHP 5 and MySQL", Wiley India Reprint, 2008.
4. Robert Sheldon, Geoff Moes, "Beginning MySQL", Wrox, 2005.
5. Alexis Leon and Mathews Leon, "Database Management Systems", Vikas, 2008.

# CA315 CYBER LAW AND INTERNET SECURITY

## w.e.f. Session 2017-2018

PREREQUISITE: NONE                COREQUISITE: NONE                **L   T   P**
                                                                  **3   1   0**

**UNIT-I**

**Fundamentals of E-commerce:** Basic of E-Commerce, Types of E–Commerce, Benefits, Advantages and Disadvantages, Impact of E-Commerce on Business. Network Infrastructure for E-Commerce: Internet and Intranet. E-Commerce: Issues, Problems and Prospects, Network Access Equipments, Broadband Telecommunication.                            [8]

**UNIT-II**

**Internet Security:**  Security Issues on Web, Importance of Firewall, Components of Firewall, Transaction Security, Emerging Client Server, Security Threats, Network Security, Factors to Consider in Firewall Design, Limitation of Firewalls.                            [8]

**UNIT-III**

**Encryption:** Encryption Techniques, Symmetric Encryption Keys and Data Encryption Standard, Triple Encryption, Asymmetric Encryption Secret Key Encryption, Public and Private Pair Key Encryption, Digital Signatures, Virtual Private Network.
**Digital Signatures:** Technical Issues, Legal Issues, Electronic Records, Digital Contracts and Requirements of Digital Signature System.                            [8]

**UNIT-IV**

**Fundamentals of Cyber Law:** Jurisprudence of Cyber Law, Object and Scope of the IT Act 2000, Introduction to Indian Cyber Law, Unicitral Model Law, ISP Guideline, Intellectual Property Issues and Cyber Space, Indian Perspective, Overview of Intellectual Property related Legislation in India, Patent, Copyright, Trademark Law, Law related to Semiconductor Layout and Design.                            [8]

**UNIT-V**

**Investigation and Ethics:** Cyber Crime, Cyber Jurisdiction, Cyber Crime and Evidence Act, Treatment of Different Countries of Cyber Crime, Ethical Issues in Data and Software Privacy, Plagiarism, Pornography, Tampering Computer Documents, Data Privacy and Protection, Domain Name System, Software Piracy, Issues in Ethical Hacking.
**Internet Security Treats:** Hacking, Cracking, Sneaking, Virus, Trojan horse, Malicious Code and Logic Bombs, Introduction to Biometric Security and its Challenges, Finger Prints.        [8]

**REFERENCES:**

1. Ravi Kalakota, Andrew Winston, "Frontiers of Electronic Commerce", Addison Wesley.
2. Bajaj and Nag, "E-Commerce: The Cutting Edge of Business", TMH.
3. Harish Chander, "Cyber Law and IT Protection", PHI Publication.
4. Merkov, Breithaupt, "Information Security", Pearson Education.
5. Farooq Ahmad, "Cyber Law in India", Pioneer Books.
6. K. K. Singh, Akansha Singh "Information Security and Cyber Law", Umesh Publication.

# CA316 MANAGEMENT INFORMATION SYSTEM

## w.e.f. Session 2017-2018

PREREQUISITE: NONE                COREQUISITE: NONE            **L  T  P**
                                                              **3  1  0**

**UNIT-I**
**Foundation of Information Systems:** Introduction to Information System in Business, Fundamentals of Information Systems, Solving Business Problems with Information Systems, Types of Information Systems, Effectiveness and Efficiency Criteria in Information System.   [8]

**UNIT-II**
**An Overview of Management Information System:** Definition and Concept of a Management Information System, MIS Vs Data Processing, MIS and Decision Support System, MIS and Information Resources Management, End User Computing, Structure of a Management Information system.                                                               [8]

**UNIT-III**
**Concepts of Planning and Control:** Concept of Organizational Planning, The Planning Process, Computational Support for Planning, Characteristics of Control Process, The Nature of Control in an Organization.                                                                          [8]

**UNIT-IV**
**Business Applications of Information Technology:** Internet and Electronic Commerce, Intranet, Extranet and Enterprise Solutions, Information System for Business Operations, Information System for Managerial Decision Support, Information System for Strategic Advantage.                                                                              [8]

**UNIT-V**
**Managing Information Technology:**  Enterprise and Global Management, Security and Ethical Challenges, Planning and Implementing Changes.
**Advanced Concepts in Information Systems:** Enterprise Resource Planning, Supply Chain Management, Customer Relationship Management and Procurement Management.            [8]

**REFERENCES:**
1. Brian, "Management Information System", Tata Mcgraw-Hill Education Pvt. Ltd.
2. Gordon B. Davis and Margrethe H. Olson, "Management Information System", Tata Mcgraw-Hill Education Pvt. Ltd.
3. Brian, "Introduction to Information System", Tata Mcgraw-Hill Education Pvt. Ltd.
4. Murdick, "Information System for Modern Management", PHI Learning Private Limited, Delhi India.
5. Jawadekar, "Management Information System", Tata Mcgraw-Hill Education Pvt. Ltd.

# CA317 E-GOVERNANCE

## w.e.f. Session 2017-2018

PREREQUISITE: NONE          COREQUISITE: NONE      **L   T   P**

                                                                         **3   1   0**

### UNIT-I

**Basic Concept of E-Governance:** Meaning of E-Governance, Concept and need of E-Governance, Meaning of Digital India, Overview of E-Governance Framework.

**The E-Kranti Framework:** Preamble, Role of E-Kranti in Digital India and its Approval, Objectives of E-Kranti, Principles of E-Kranti, Approach and Methodology for Implementing E-Kranti, Implementation Strategy of E-Kranti. [8]

### UNIT-II

**Policy on Adoption of Open Source Software for Government of India:** Objective, Policy Statement, Nature of Compliance, Applicability, How to Comply, Exception, Implementation Mechanism, Review of Policy.

**Framework for Adoption of Open Source Software in E-Governance Systems:** Metadata, Scope and Applicability, OSS Current Scenario, Factors Influencing the Adoption of OSS, Impact of Adoption of OSS, Types of OSS Support Models, OSS Licenses, Security Aspects, Unified Software Development, Rapid Application Development, Localization and OSS, Device Driver, Procurement Guidelines, Stages for Induction of OSS Solution, Proposed Ecosystem. [8]

### UNIT-III

**Policy on Open Application Programming Interfaces (APIs) for Government of India:** Objectives and Definition, Policy Statement, Nature of Compliances, Applicability, Implementation Mechanism, Review of Policy.

**Email Policy of Government of India:** Objectives, Roles Specified for Implementation of the Policy, Basic Requirements of GoI E-mail Service, Responsibilities of User Organizations, Responsibilities of Users, Service Level Agreement, Scrutiny of E-mails/Release of Logs, Security Incident Management Process, Intellectual Property, Enforcement, Deactivation, Exemption, Audit. [8]

### UNIT-IV

**Policy on Use of IT Resources of Government of India:** Scope, Objectives, Roles and Responsibilities, Access to the Network, Monitoring and Privacy, E-mail Access from the Government Network, Access to Social Media Sites, Security Incident Management Process, Intellectual Property, Enforcement, Deactivation, Audit.

**Policy on Collaborative Application Development by Opening the Source Code of Government Applications:** Metadata, Preamble and Effective Date, Objectives, Applicability, Policy Statement, Responsibilities, Review. [8]

**UNIT-V**

**Application Development & Re-Engineering Guidelines for Cloud Ready Applications:** Introduction, Need for Software Development and Re-Engineering Guidelines, Evolution of eGov App Store, Solution Architecture, Standards, Adoption and Solution Engineering, Integration and Interoperability, Quality Certification, Release Management and Documentation, Solution Sizing and Scalability, Language and Interface, Legacy Integration: Digitization and Migration, Intellectual Property Rights (for Center and State owned Applications). Cloud Enablement of Applications: Application Migration to Cloud, Software as a Service Characteristics, Utilizations of Indian Theory in Public Administration, Raising Competence of Administration: Role of Indian Theory. [8]

**REFERENCES:**
1. "e-Governance Policy Initiatives under Digital India", by Department of Electronics and Information Technology, Ministry of Communication and Information Technology, Government of India, http://negd.gov.in/ebook-e-governance-policy-initiatives-under-digital-india.
2. M.G. Gupta and R.K. Tiwari (eds.), Reinventing the Government, IIPA, 1998.
3. Richard Hecks, Implementing and Managing e-Governance, Vistar Publications.
4. Jan Erik Lane, New Public Management, Rout ledges, 2000.
5. Work Bank Report, Good Governance, The Business of Government, 1997.
6. IJPA Special No. on "Indian Theory and Public Administration", July-September, 2000.
7. IJPA Special No. on "Towards Good Governance", July-September, 2000.
8. Articles on Indian Theory, e-Governance and Good governance for IJPA, ISDA Journal and Administrative Change.

# CA318 FUNDAMENTALS OF E-COMMERCE

## w.e.f. Session 2017-2018

PREREQUISITE: NONE          COREQUISITE: NONE          **L  T  P**

**3  1  0**

### UNIT-I

**E-Business and E-Commerce:** Introduction, Potential Benefits, Limitations, Classifications, Impact of E-Commerce on Business Models. E-Commerce Applications: Entertainment, E-Marketing, E-Advertising, Search Engines, E-Banking, Mobile Commerce, Online Trading, E-Learning, E-Shopping, Information Superhighway.                    [8]

### UNIT-II

**Architecture Framework of E-Commerce:** Application Services, Brokerage and Data Management, Interface Layers, Secure Messaging, Middleware Services and Network Infrastructure. Security Protocols: Open Systems Interconnection (OSI), TCP/IP, FTP, HTTP, SMTP, S-HTTP, SSL, NNTP. Messaging Protocols: Basic Mail Protocol, Security Enhanced Mail Protocol, Web Security Issues, Encryption Techniques: Symmetric and Asymmetric.     [8]

### UNIT-III

Consumer Oriented E-Commerce Applications, Mercantile Process Model: Consumers Perspective and Merchant's Perspective. Electronic Payment Systems: Advantages and Risks, Types of Payment System (Credit Cards, E-Cash, Smart-Cards), etc.                    [8]

### UNIT-IV

**Electronic Data Interchange:** EDI Architecture, EDI Standards, Non EDI System, Partial EDI System, Fully Integrated EDI System, Prerequisites for EDI. Issues of EDI: Legal Issues, Security Issues, Privacy Issues, Fundaments of Financial Electronic Data Interchange, Taxation Rules in the E-Commerce.                    [8]

### UNIT-V

**Digital Marketing:** Search Engines, Directories, Registrations, Solicited Targeted E-mails, Interactive Sites, Banners, Advertising, Spam Mails, E-mail, Chain Letters. Applications of 5P's (Product, Price, Place, Promotion, People). E-Advertising Techniques: Banners, Sponsorships, Portals, Online Coupons, Digital Assets of Company.                    [8]

**REFERENCES:**
1. David Whiteley, "E-Commerce", Tata McGraw Hill, 2000.
2. Greenstein and Feinman, "Electronic Commerce – Security: Risk Management & Control", McGraw-Hill, 1999.
3. Ravi Kalakota and A.B. Whinston, "Frontiers of Electronic Commerce", Pearson Education, 2005.
4. Eframi Turban, Jae Lee, David King, K. Michale Chung, "Electronic Commerce", Pearson Education, 2000.
5. Henry Chan, Raymond Lee, Elizabeth Chang, "E-commerce: Fundamentals and Applications", Wiley, 2001.

# CA319 ERP SYSTEMS

## w.e.f. Session 2017-2018

PREREQUISITE: NONE          COREQUISITE: NONE          **L  T  P**

**3  1  0**

### UNIT-I
**Introduction to ERP:** Common Myths, Advantages, Basic Concepts, Risks and Benefits.
**Evolution of ERP:** Material Requirement Planning, Manufacturing Resource Planning, ERP, e-ERP.
**ERP and Related Technologies:** Business Process Reengineering (BPR), Data Warehousing, Data Mining, Online Analytical Processing (OLAP), Online Transaction Processing (OLTP), Supply Chain Management (SCM) and Customer Relationship Management (CRM).          [10]

### UNIT-II
**ERP Marketplace and Marketplace Dynamics:** Market Overview, Marketplace Dynamics, Changing ERP Market, Functional Modules**.**
**ERP Implementation Basics:** Technological, Operational, and Business reasons for Implementing ERP, Implementation Challenges, Implementation Life Cycle, Package Selection.
          [8]

### UNIT- III
**ERP Transition Strategies:** Big Bang Strategy, Phased Implementation, Parallel Implementation, Process Line Transition Strategy, Hybrid Transition Strategy.
**ERP Implementation Process:** Implementation Methodologies, Implementation Plan, Risk Assessment, ERP Project Teams, Implementation Vendors Evaluation Criterion.          [8]

### UNIT- IV
**Success and Failure Factors of an ERP Implementation:** Success Factors, Failure Factors.
**ERP Operation and Maintenance:** After Going Live, Ongoing Implementation Efforts, Upgrading Vs New Software, Operation and Maintenance of the ERP System, ERP Maintenance Phase, Maximizing the ERP System.          [8]

### UNIT- V
**Emerging Trends in ERP:** Supply Chain Integration, The E-Business Process Model, Components of E-Business Supply Chain, Future of ERP, Faster Implementation Methodologies, Customization Tools, Business Models, Challenges of E-Commerce.
**Commonly Used ERP Packages:** Tally ERP, TCS-ION, SAP.          [6]

**REFERENCES:**
1. Lexis Leon, "Enterprise Resource Planning", TMH.
2. Brady, Manu, Wegner, "Enterprise Resource Planning", TMH.
3. V.K Garg, N.K. Venkitakrishnan, "ERP Ware: ERP Implementation Framework", Prentice Hall of India.

# CA320  AI AND EXPERT SYSTEMS

## w.e.f. Session 2017-2018

PREREQUISITE: NONE             COREQUISITE: NONE          **L  T  P**

**3  1  0**

**UNIT-I**
**Overview of AI:** Definition of AI, The AI Problems, Application of AI, Water Jug Problem, Defining the Problem as a State Space Search, Problem Characteristics, Production Systems, Control Strategies, Forward and Backward Chaining.                                    [8]

**UNIT-II**
**Search Techniques:** Depth First Search, Breadth First Search, Depth Limited Search, Iterative Deepening First Search, Hill Climbing, Best First Search and A* Algorithm, OR Graphs, Problem Reduction, AO* Algorithm, Constraint Satisfaction Problems.                    [8]

**UNIT-III**
**Knowledge Representation:** Approach to Knowledge Representation, Issues in Knowledge Representation, First Order Predicate Logic, Horn's Clauses, Conversion to Clausal Form, Resolution Principle in Propositional Logic, Semantic Networks, Frame Structure.          [8]

**UNIT-IV**
**Introduction to Functional Programming Language:** Introduction to LISP and its Syntax, Numeric Function, Basic List Manipulation Function, Input/ Output and Local Variables, Recursion Function, Property of List, Arrays.                                    [8]

**UNIT-V**
**Expert Systems:** Introduction to Expert Systems, Rule Based System Architecture, Knowledge Acquisition and Validation, Expert System Shells.
**Case Studies:** MYCIN                                                          [8]

**REFERENCES:**
1. Elaine Rich and Kevin Knight, "Artificial Intelligence", Tata McGraw Hill.
2. Dan W.Patterson, "Introduction to Artificial Intelligence and Expert Systems", Prentice Hall of India.
3. Nils J.Nilsson, "Principles of Artificial Intelligence", Narosa Publishing house.
4. Stuart Rusell, Peter Norvig, "Artificial Intelligence: A Modern Approach", Pearson Edition 2.

# CA321 PROJECT LAB

## w.e.f. Session 2017-2018

**PREREQUISITE: NONE**          **COREQUISITE: NONE**          **L  T  P**

**0  0  6**

Students are required to carry out the work ahead of the previous semester and build their final year project as per schedule. The final evaluation will be based on the application developed. Students will be required to submit their original work in the form of hard and soft copies as well as make presentations for their examination.

# CA322 ADVANCED TECHNOLOGY LAB

## w.e.f. Session 2017-2018

**PREREQUISITE: NONE**          **COREQUISITE: CA313**          **L  T  P**
                                                                **0  0  2**

1. Observe and Draw Visual .NET IDE layout and hands on practice to create, save and open the project.

2. Write, test and debug at least five loop, array and operator based VB.NET programs.

3. Design forms and write, test and debug programs to test its various properties, methods, and events.

4. Write, test and debug program to test inputbox and message box.

5. Write, test and debug applications to use textbox, label, and button.

6. Write, test and debug applications to use radio button, checkbox, numericupdown and group box controls.

7. Write, test and debug application using datetimepicker, listbox, combo box, picture box.

8. Write, test and debug application using rich text box, progress bar, masked text box, link label.

9. Write, test and debug application using checked list box, scroll bars, timer.

10. Write, test and debug applications using sub procedures and functions.

11. Write, test and debug applications using math and string manipulation functions.

12. Create and test connection using ADO.NET to view SQL Express Server/Microsoft Access data in textbox controls.

13. Write, test and debug small application to add, edit, search, and delete record in database in unbounded mode i.e. through coding.

# CA323 OPEN SOURCE LAB

## w.e.f. Session 2017-2018

**PREREQUISITE: NONE**          **COREQUISITE: CA314**          **L  T  P**
                                                                **0  0  2**

1. Creating simple web pages using PHP.
2. Use of conditional statements in PHP.
3. Use of looping statements in PHP.
4. Creating different types of arrays in PHP.
5. Creating user defined functions in PHP.
6. Creation of files in PHP.
7. File manipulation using PHP.
8. Creation of sessions in PHP.
9. Creation of cookies in PHP.
10. Creating simple applications using PHP.
11. Creating simple table with constraints using MYSQL.
12. Insertion, Updation and Deletion of rows in MYSQL tables.
13. Usage of aggregate functions in MYSQL.
14. Working with set operators using MYSQL.
15. Working with string, numeric and date functions using MYSQL.
16. Database connectivity in PHP with MySQL.
17. Validating Input.
18. Creating simple Application using PHP and MYSQL.